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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402

EXAMINER

COX, CASSANDRA F

ART UNIT PAPER NUMBER

2816

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/771,611

Applicant(s)

GOMM ET AL.

Examiner

Cassandra Cox

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-14 is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5-7, 9, 15, 19-25, 27-29 and 31-36 is/are rejected.
- 7) ☒ Claim(s) 2, 4, 8, 16-18, 26 and 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>2/4/04, 5/27/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 3 recites the limitation "the frequency modifier" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 5-7, 15, 19-25, 27-29, and 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ooishi (U.S. Patent No. 6,421,789) in view of Matsuzaki (U.S. Patent No. 6,476,653).

In reference to claim 1, Ooishi discloses in Figure 1 a memory device comprising: an input node (P1) for receiving an external signal (CLK); a memory array (MA) having row and column of memory cells; a row decoder (10) connected to the memory device; a column decoder (14) connected to the memory device; an output data path (P13, 22,

G-I/O) for transferring of data between the cells and data lines (see column 7, line 63 through column 8, line 5); and a circuit (30) for generating an internal signal. Ooishi does not disclose that the circuit (30) includes a plurality of measuring delay elements; an interval controller; and a plurality of correction delay elements. Matsuzaki discloses in Figure 5 a plurality of measuring delay elements (30) connected to the input node for delaying the external signal (CLK2) during a measurement to produce a measured delay (ΦD); an interval controller (19A) connected between the input node and the measuring delay elements (30) for controlling the frequency of the measurement (see column 7, line 34-44); and a plurality of correction delay elements (41, 42, 43, 44...) connected to the input node for delaying the external signal (CLK2) based on the measured delay (ΦD) to generate an internal signal (d-i-CLK). Since Ooishi does not disclose the particulars of the circuit (DLL 30), it would have been obvious to one skilled in the art at the time of the invention that any DLL circuit capable of generating an internal signal based on an external signal could be used to control the transfer of the data in the circuit of Ooishi and the circuit (Figure 5) of Matsuzaki discloses an example of such a circuit providing the benefit of setting the corrected delay in a short time. The same applies to claims 5, 15, 19, 24, 28, and 31 wherein the decoding circuit is equivalent to the row and column decoder and while the processor is not shown, it is considered to be well known to one skilled in the art the memory devices such as the one disclosed by Ooishi may be connected to processors.

In reference to claim 6, Matsuzaki discloses in Figure 5 that the measuring unit includes a delay model (30) connected to an output node of the interval controller (19A) for delaying a signal outputted at the output node of the interval controller (19A). The same applies to claims 20, 21, and 34 (wherein the number represents the number of delay elements the start signal passes through).

In reference to claim 7, Matsuzaki discloses in Figure 5 that the measuring unit (19B) includes a converter (31, 32, 33, 34, 35) connected between the output node of the delay model (30) and the adjusting unit (20) for converting the reference time into a measured delay (ΦD). The same applies to claim 25.

In reference to claim 9, Matsuzaki discloses in Figure 5 that the adjusting unit (20) includes a plurality of correction delay elements (41, 42, 43, 44...) connected between the input nodes of the memory device and the output nodes of the adjusting unit (20). The same applies to claims 22, 27, and 35.

In reference to claim 23, Matsuzaki discloses in Figure 8 that the time interval between consecutive measurements among the number of measurements is greater than the cycle time of the external signal (CLK2). The same applies to claims 29 and 32 (see Figures 5, 6, and 8).

In reference to claim 33, Matsuzaki discloses in Figure 8 that the external signal (CLK2) has a frequency equal to a multiple of a frequency of the start signal (START).

In reference to claim 36, Matsuzaki discloses in Figure 5 that the number of measuring delay elements (each element consisting of one NAND gate and one inverter) and a number of correction delay elements (41, 42, 43, 44...) are equal.

Allowable Subject Matter

6. Claims 10-14 are allowed.
7. Claims 2, 4, 8, 16-18, 26, and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. The following is a statement of reasons for the indication of allowable subject matter: Claims 2-4, 8, and 16-18 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 7 which includes a frequency modifier (710) for setting the time interval between one measurement and the next measurement to be unequal to a cycle time of the external signal (XCLK) in combination with the rest of the limitations of the base claims and any intervening claims. This reason is based on the examiner's interpretation that claim 3 would be dependent on claim 2. Claim 26 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 1 wherein producing the reference time (T_{REF}) includes subtracting the model delay time (T_{DL}) from at least one cycle time of the external signal (MT_{CK}) in combination with the rest of the limitations of the base claims and any intervening claims. Claim 30 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 2 wherein the stop signal (STOP) is shifted from the start signal (START) by at least one cycle of the external signal (XCLK) in combination with the rest of the limitations of the base claims and any intervening claims.

9. The following is an examiner's statement of reasons for allowance: Claims 10-14 are allowed because the closest prior art of record fails to disclose a circuit as shown in Figure 7 which includes a frequency divider (710) located on the first path for dividing a frequency of the external signal (CLKIN) to control a frequency of the measurement such that the frequency of the measurement is unequal to the frequency of the external signal (CLKIN) in combination with the rest of the limitations of the base claims and any intervening claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cassandra Cox whose telephone number is 703-306-5735. The examiner can normally be reached on Monday-Thursday from 7:00 AM to 4:30 PM and on alternate Fridays from 7:00 AM to 3:30 PM.

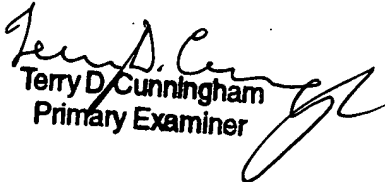
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on (703)-308-4876. The fax phone numbers for the organization where this application or proceeding is assigned are 703-

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872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

CC

March 18, 2005


Terry D. Cunningham
Primary Examiner